



MISSOURI DEPARTMENT OF
HEALTH

10.9
Mel Carnahan
Governor

Coleen Kivlahan, M.D., M.S.P.H.
Director

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February 23, 1994

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SPFD BRANCH

Ms. Diana L. Newman
Environmental Engineer
Waste Management Division
U. S. Environmental Protection Agency
726 Minnesota Ave.
Kansas City, Kansas 66101

Sites:	West Lake Landfill
ID #:	MOD07990932
Break:	1.6
Other:	Comments
	2-23-94

Dear Ms. Newman:

0714

Missouri Department of Health (DOH) has received and reviewed the latest interim submittal from McLaren-Hart concerning West Lake Landfill. Specifically, DOH was asked to review the risk-based Preliminary Remediation Goals (PRGs) presented with this submittal. Slope Factors, Reference Doses and PRG calculations were spot-checked for accuracy.

With the exception of the volatile/semi-volatile organic and radionuclide PRGs for industrial soil, all PRG calculations were found to be accurate. Volatilization Factors were not available for volatile and semi-volatile organics, so these calculations were not checked. PRGs for radionuclides in industrial soil were calculated using the wrong equation. DOH has generated some specific comments regarding the risk-based PRGs, and these comments are included as an enclosure with this letter.

Thank you for the opportunity to review this document. If you have any questions or need additional information, please feel free to call Mr. Chuck Arnold at (314) 751-6102.

Sincerely,

Daryl W. Roberts
Chief

Bureau of Environmental Epidemiology

Enclosures



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Comments on Risk-Based Preliminary Remediation Goals (PRGs)
Presented in the Interim Submittal of
Responses to EPA's Comments of December 22, 1993
on West Lake Landfill Work Plan and Related Documents

1. Page 5-9, second paragraph. This paragraph states that risk-based PRGs calculated using default values are presented in Table 5-2, and then goes on to state these PRGs are presented in Table 5-1. Table 5-1 presents Contaminants Of Concern and Preliminary Remedial Action Objectives (PRAOs) for the media of concern.
2. Table 5-1. COCs for air should include organics/inorganics in fugitive dust.
3. Table 5-2, page 1 of 3. The oral RfD (RfDo) has been used as the inhalation RfD (RfDi) for several compounds: acetone, bis(2-ethylhexyl) phthalate, hexachlorobenzene, phenol, chlordane and dieldrin. Is this appropriate? Use of the RfDo as the RfDi may result in the calculation of a PRG that is not protective of human health.
4. Table 5-2, page 1 of 3. The PRG for lead in tap water should be 15 ug/L.
5. Table 5-2, page 1 of 3. Please indicate the source for the RfDo / RfDi used for 4, 4' DDD in Table 5-2. A value of 5×10^{-4} has been presented.
6. Table 5-2, page 1 of 3. Please provide contaminant-specific soil-to-air volatilization factors (VF) used in calculating noncarcinogenic and carcinogenic PRGs for non-radioactive volatile and semi-volatile contaminants in soil.
7. Table 5-2, page 2 of 3. The oral RfD (RfDo) has been used as the inhalation RfD (RfDi) for two compounds: endrin and HCH (gamma) Lindane. Use of the RfDo as the RfDi may result in the calculation of a PRG that is not protective of human health.
8. Table 5-2, page 2 of 3. The PRG for HCH (gamma) Lindane in tap water should read 0.2 ug/L MDWR.
9. Table 5-2, page 2 of 3. The correct units for the external exposure cancer slope factor (SFe) for radionuclides is risk/year per pCi/g of soil.
11. Table 5-2, page 3 of 3. The equation shown for calculating PRGs for radionuclides in commercial/industrial soil is incorrect. Because the Office of Radiation Programs has changed the way it calculates slope factors, EPA revised the equations presented in RAGS (Part B) for calculating PRGs for radioactive contaminants in commercial/industrial soil. EPA now uses two equations to calculate PRGs for radionuclides in commercial/industrial soil. These equations are as follows:

Nonvolatiles

$$\text{Risk-based PRG} = \frac{0.000001}{(\text{pCi/g; TR} = 10^{-6}) \quad [(3.1 \times 10^2 (\text{SF}_o)) + (2.7 \times 10^{-2} (\text{SF}_i)) + 6(\text{SFe})]}$$

Volatiles

$$\begin{array}{l} \text{Risk-based PRG} = \frac{0.000001}{[(3.1 \times 10^2 (\text{SF}_o)) + ((1.3 \times 10^8 / \text{VF} + 2.7 \times 10^{-2})(\text{SF}_i)) + 6(\text{SF}_e)]} \\ \text{(pCi/g;} \\ \text{TR} = 10^{-6}) \end{array}$$